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☒ L3: (1637) 369/44.27  
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☒ L5: (9213) G11B007/08  
☒ L6: (15413) G11B007/085
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1. *Phragmites australis* (Cav.) Trin. ex Steud.

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US-PAT-NO: 5848043  
DOCUMENT- US 5848043 A  
IDENTIFIER:

TITLE: Modulation of laser power in accordance with a linear velocity by pulse division schemes

# Brief Summary Text - BSTX (10):

In the recording medium of phase-change type as described above, since the thermal process during recording and erasing is significantly affected by the scanning speed of laser beam, i.e., linear velocity on a disc, composition of the recording layer and multilayer structure thereof should be optimized for the linear velocity on the disc in order to improve recording and erasing performance. Formation of an amorphous mark is generally performed by melting an . $\mu$ m-size portion of a recording layer by irradiation with a recording power, followed by cooling at a rate higher than a critical cooling rate. In detail, a high cooling rate is effected by a high linear velocity, while a low cooling rate is effected by a low linear velocity.



US005848043A

[19] [11] Patent Number: 5,848,043  
[45] Date of Patent: Dec. 8, 1998

## ER IN VELOCITY

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D: G11B 11/10  
369/54; 369/59  
70.1; 369/283,  
34, 116, 54, 59

..... 369/116  
..... 369/116

ITS

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Japanese Journal of Applied Physics, vol. 30, no. 4, pp. 677-681, April, 1991, Elji Ohno, et al., "Multipulse Recording Method for Pulse-Width Modulation Recording on an Erasable Phase Change Optical Disk".

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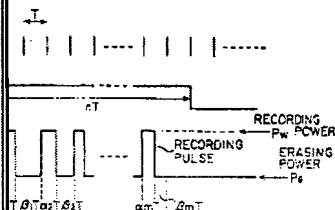
Proc. Int. Symp. On Optical Memory, pp. 291-296, 1991, Kenichi Nishituchi, et al., "Feasibility Study of Ge-Sb-Te Phase-Change Optical Disk Medium for One-Pass Overwrite Digital Audio Recording".

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## [57] ABSTRACT

An optical recording process for recording data on a recording medium of phase-change type employs laser power modulation scheme for mark-length modulation recording. The process selects one of pulse division schemes for modulating the laser power in accordance with a linear velocity on the disc. The recording laser includes  $m$  pulses for  $nT$  mark having a power level  $P_w$  and a duration of  $\alpha T$ , with  $m$  intervals  $\beta T$  sandwiched therebetween, wherein on condition that  $m = n - k$  and  $\Sigma \alpha + \Sigma \beta = n - j$ ,  $\alpha$ , or bias power  $P_b$ , is changed in accordance with the linear velocity,  $P_b$  being a bias power level for modulation,  $k$  and  $j$  being an integer and a real number, respectively, both selected between 0 and 2. A large range of the linear velocity margin can be obtained for the disc without changing either the composition of the phase-change material or multi layer structure on the disc.

14 Claims, 21 Drawing Sheets



- Drafts
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- Pending
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  - L2: (129) 369/44.29
  - L3: (43) 369/44.41
  - L4: (92) 369/53.28
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